

**TEREBRA RETICULATA, NEW SPECIES OF TEREBRIDAE
(GASTROPODA, PROSOBRANCHIA, CONOIDEA) FROM
SOUTHEASTERN BRAZIL**

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A B S T R A C T

Terebra reticulata new species is described from deepwater off the southeastern Brazilian coast. The anterior portion of the digestive system is rather simple, without accessory structures. Radular teeth are barbed. Foregut is type IIA. Pallial oviduct is also rather simple, although dissected specimens may be immature.

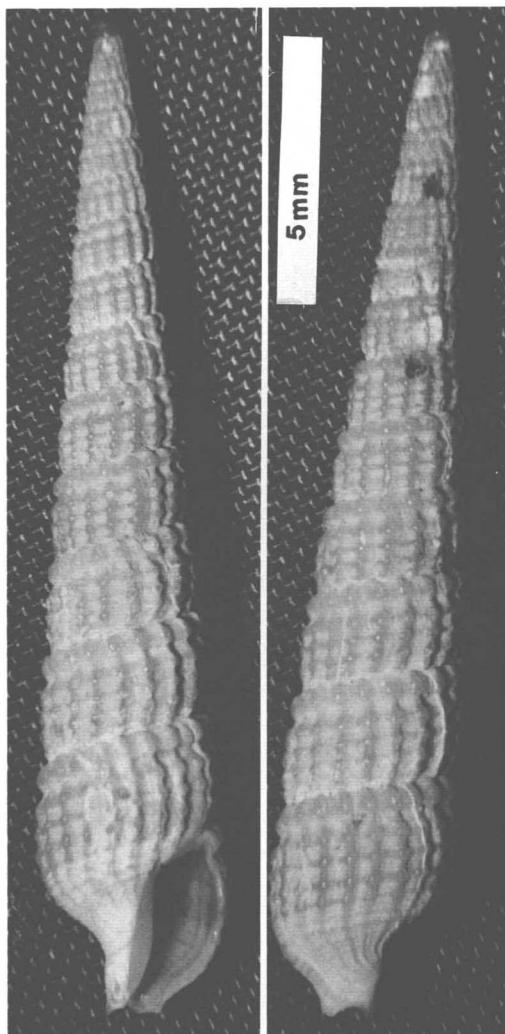


Figure 1. *Terebra reticulata* new species, Holotype, MZUSP 27930, apertural and dorsal view.

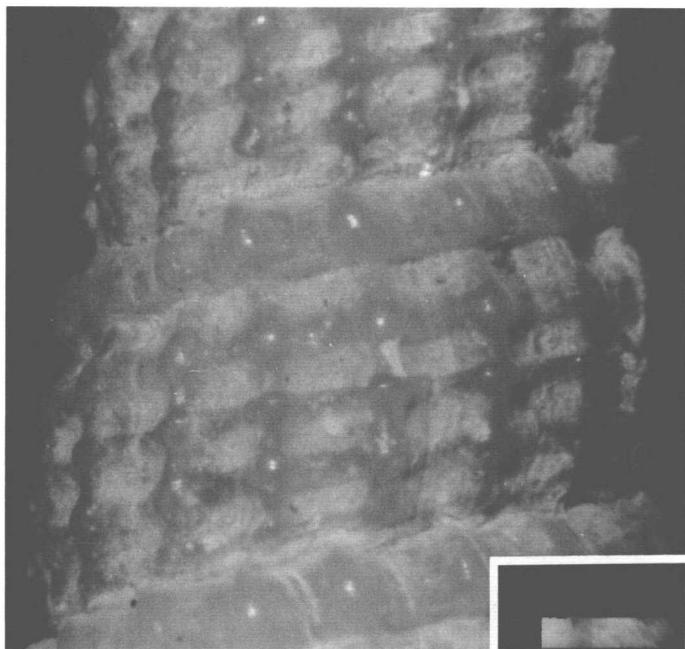


Figure 2. *Terebra reticulata* new species, Holotype MZUSP 27930 teleoconch shell sculpture.

In the "Projeto Integrado Utilização Racional dos Ecossistemas Costeiros da Região Tropical Brasileira: Estado de São Paulo," several terebrids were dredged between 240 to 350 m depths by the R/V PROF. W. BESNARD of the "Instituto Oceanográfico da Universidade de São Paulo" (IOUSP). A comparison with previously described taxa showed that all these specimens represent a single new species.

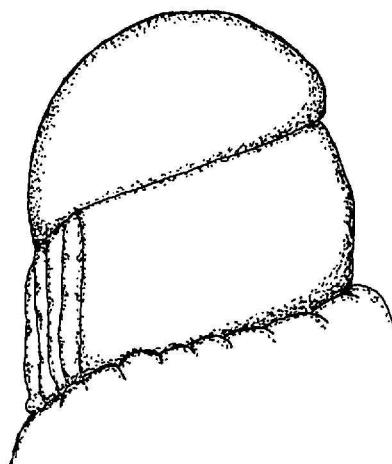


Figure 3. *Terebra reticulata* new species, Holotype, MZUSP 27930, protoconch.

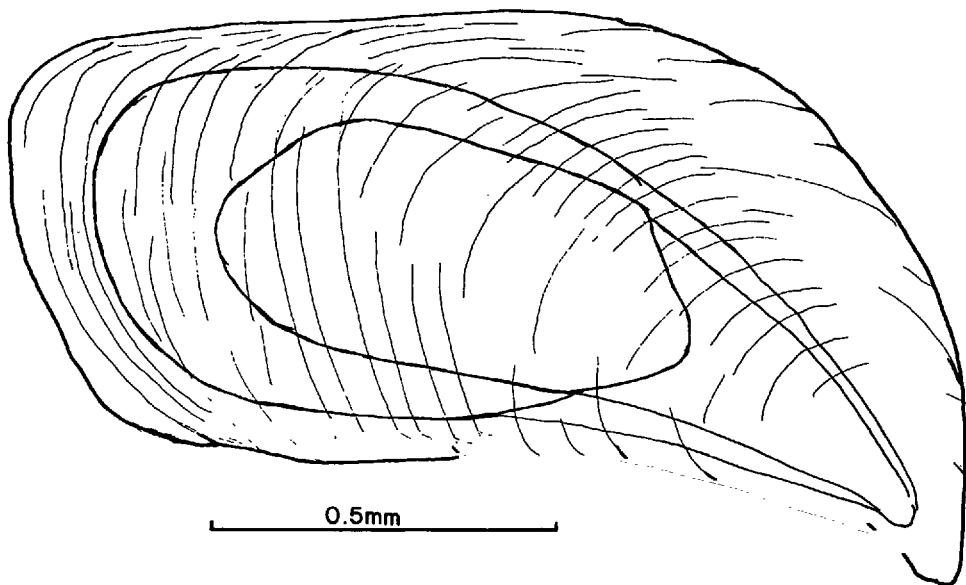


Figure 4. Operculum of a dissected specimen, external view.

MATERIAL AND METHODS

The 82 specimens were collected by a beam trawl dredge and preserved in 70% ethanol. About 10 specimens were collected alive, five female specimens were examined anatomically. The shells were decalcified in Railliet-Henry fluid, soft tissue was dehydrated in an ethanol series, dried in Carmin, fixed and cleared in creosote. Radulae were extracted and examined while immersed in glycerine. All of the drawings were made with the aid of a camera lucida. The anatomical and conchological terminologies of Taylor and Miller (1990) and Bratcher and Cernohorsky (1985) respectively are followed in this description.

SYSTEMATICS

Genus *Terebra* Bruguière, 1789

Terebra reticulata new species

Figures 1–8

Holotype.—MZUSP 27930; Paratypes: MZUSP 27931, 1 specimen; MZUSP 27932, 1 specimens; MZUSP 27933, 25 specimens; all from the type locality; MZUSP 27934, 2 specimens, Station 5366, 24°22'3"S, 44°18'0"W, 240 m deep, 7/xii/1988; MZUSP 27935, 23 specimens, Station 5368, 24°31'0"S, 44°28'0"W, 250 m deep, 8/xii/1988; MZUSP 27936, 23 specimens, Station 5367, 24°34'2"S, 44°26'0"W, 350 m deep, 8/xii/1988. Museu Oceanográfico da Fundação Universidade do Rio Grande, MORG 30667 e MORG 30668, 2 specimens from type locality.

Type Locality.—Brazil, São Paulo, slope off Ubatuba, Station 5361, 24°42'0"S, 44°30'5"W, 320 m depth.

Diagnosis.—Long slender shell, sculptured with strong spiral and axial ribs, sub-sutural spiral rib larger than the others. Operculum large. Accessory structures in rhynchodeal cavity absent. Harpoon-like barbed radular teeth.

Description.—SHELL. Medium-sized (to 25 mm), slender, elongate (Fig. 1); color cream to white; whorls slightly convex. Protoconch with 1.5 whorls, smooth, bluntly round (Fig. 3). Teleoconch of about 15 whorls, spire angle of about 10°;

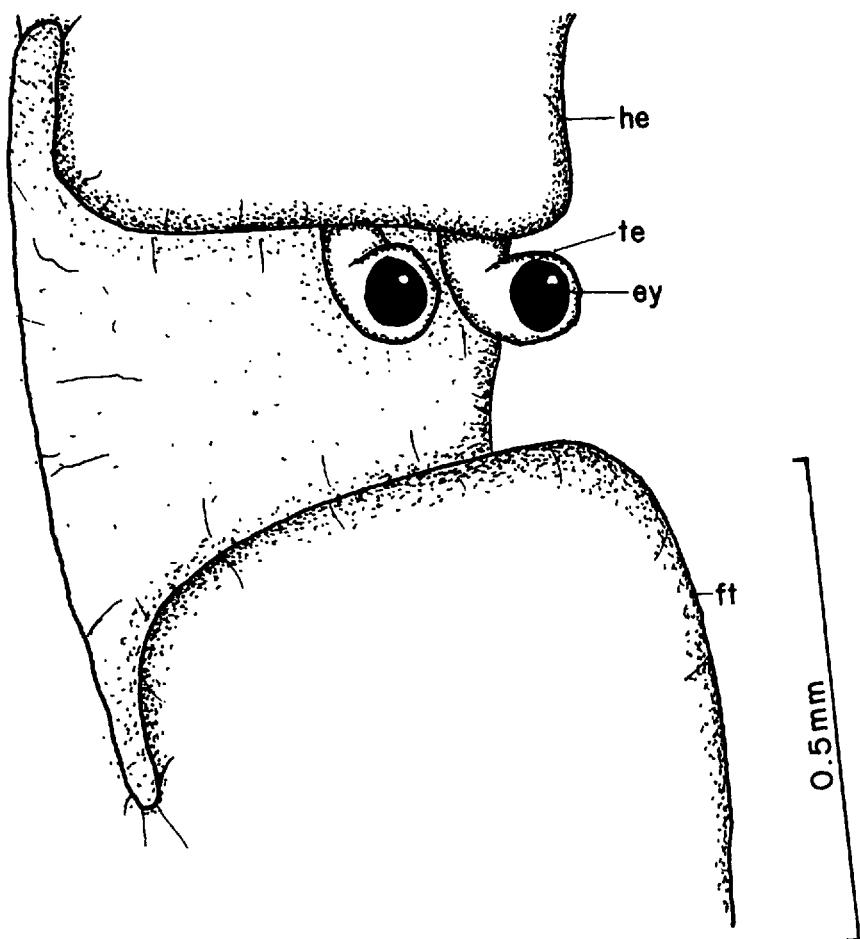


Figure 5. Detail of head region and foot, in frontal view, retracted specimen. (Abbreviations: ag = albumen gland, an = anus, cg = capsule gland, ct = ctenidium or gill, dg = digestive gland, ey = eye, fa = pharynx, ft = foot, he = head, in = intestine, je = jejunum, lt = labial tube, mb = mantle border, ng = anal gland, oe = oesophagus, os = osphradium, pb = proboscis, pc = pericardium, rc = rhynchodeal cavity, ro = renal organ, rs = radular sac, sg = salivary glands, si = siphon, st = stomach, te = tentacle, vb = venom bulb, and vg = venom gland).

sculptured with axial and spiral ribs, of equal strength which form low nodes where they intersect (Fig. 2); subsutural rib larger than other spiral ribs, with strong nodes; penultimate whorl with about 17 axial and five spiral ribs. Aperture moderately elongate, white within; convex and smooth outer lip; concave inner lip. Columella recurved. Siphonal channel short and recurved.

OPERCULUM. Piriform, large, arched, corneus, transparent, yellowish (Fig. 4), completely closing aperture. Terminal nucleus. Obsolete concentric lines externally.

CEPHALO-PEDAL COMPLEX. Pale beige in color, short tentacles, with dark eyes in tip, emerge between the head and the foot in retracted specimen (Fig. 5). Without snout. Foot well developed, without divisions. Columellar muscle of four whorls in length.

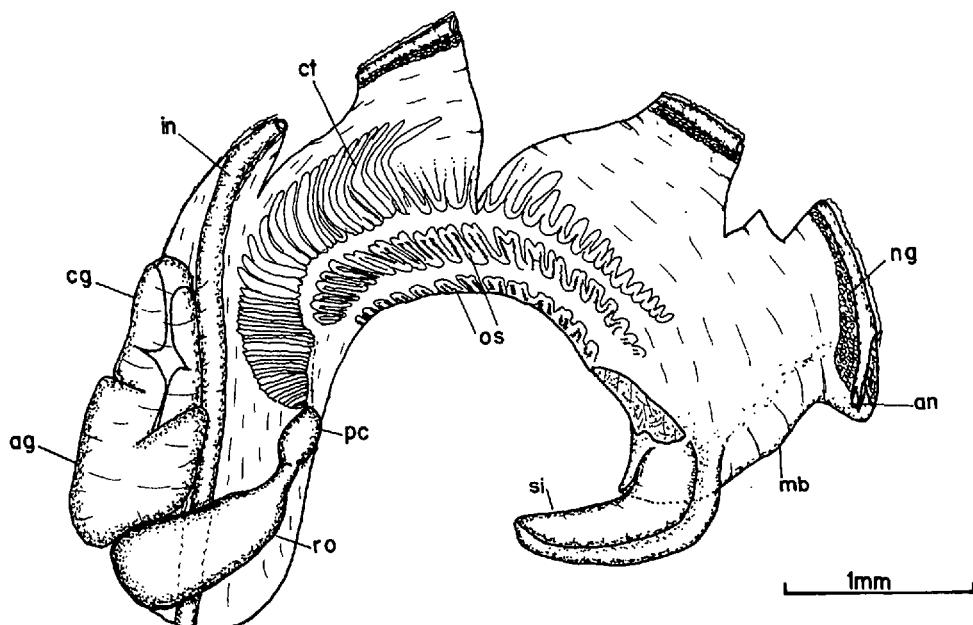


Figure 6. Pallial cavity of female. (Abbreviations see Figure 5).

PALLIAL ORGANS. Pallial cavity 1.5 whorls in length (Fig. 6). Renal organ claviform, situated at posterior portion of pallial cavity, touching the pericardium. Albumen gland cylindrical, solid and transparent; long and conic capsule gland. Gill long and arched, with about 55 filaments, becoming narrow near siphon base. Osphradium bipectinate, large, pale brown with about 22 right and 14 left filaments. Siphon well-developed, smooth and short, pale beige in color.

DIGESTIVE SYSTEM. Rhynchodeal cavity (proboscis sac) (rc) with two structures, evversible labial tube (lt) and proboscis (pb), no accessory proboscis structure was found (Fig. 7). Labial tube well-developed, occupying about $\frac{1}{4}$ of length of rhynchodeal cavity. Proboscis very long, apex slender. Short and spheric pharynx (fa); into which run radular sac and venom gland. Acinous salivary gland lies anterior to oesophagus. Venom gland long, convoluted, terminating posteriorly in large, elliptical muscular bulb. Venom gland enters the pharynx, just above radular sac (not to salivary gland). Oesophagus short, broad, with very slender and irregular wall. Stomach long, about one whorl in length, thick walled. Jejune short and curved. Intestine parallel to stomach, curving ventrally about renal organ, on left side of albumen and capsule glands; terminating at anus on left side of pallial cavity, near pallial border. Anal gland slender and small.

RADULA. Radular sac about 0.5 mm long, curved at distal end (Fig. 7). Radular teeth small, harpoon-like, 60–65 μm in length each; cylindric in section (about 7 μm of diameter); tip irregularly barbed.

MEASUREMENTS. Holotype: MZUSP 27930, length = 22.2 mm \times width = 4.2 mm; Paratypes: MZUSP 27931, 20.4 \times 3.9 mm; MZUSP 27932, 22.5 \times 4.1 mm.

RANGE. Brazil, north coast of São Paulo, off Ubatuba upper continental slope.

HABITAT. Muddy bottoms, 240 to 350 m depths.

ETYMOLOGY. The name refers to the reticulate pattern of shell sculpture.

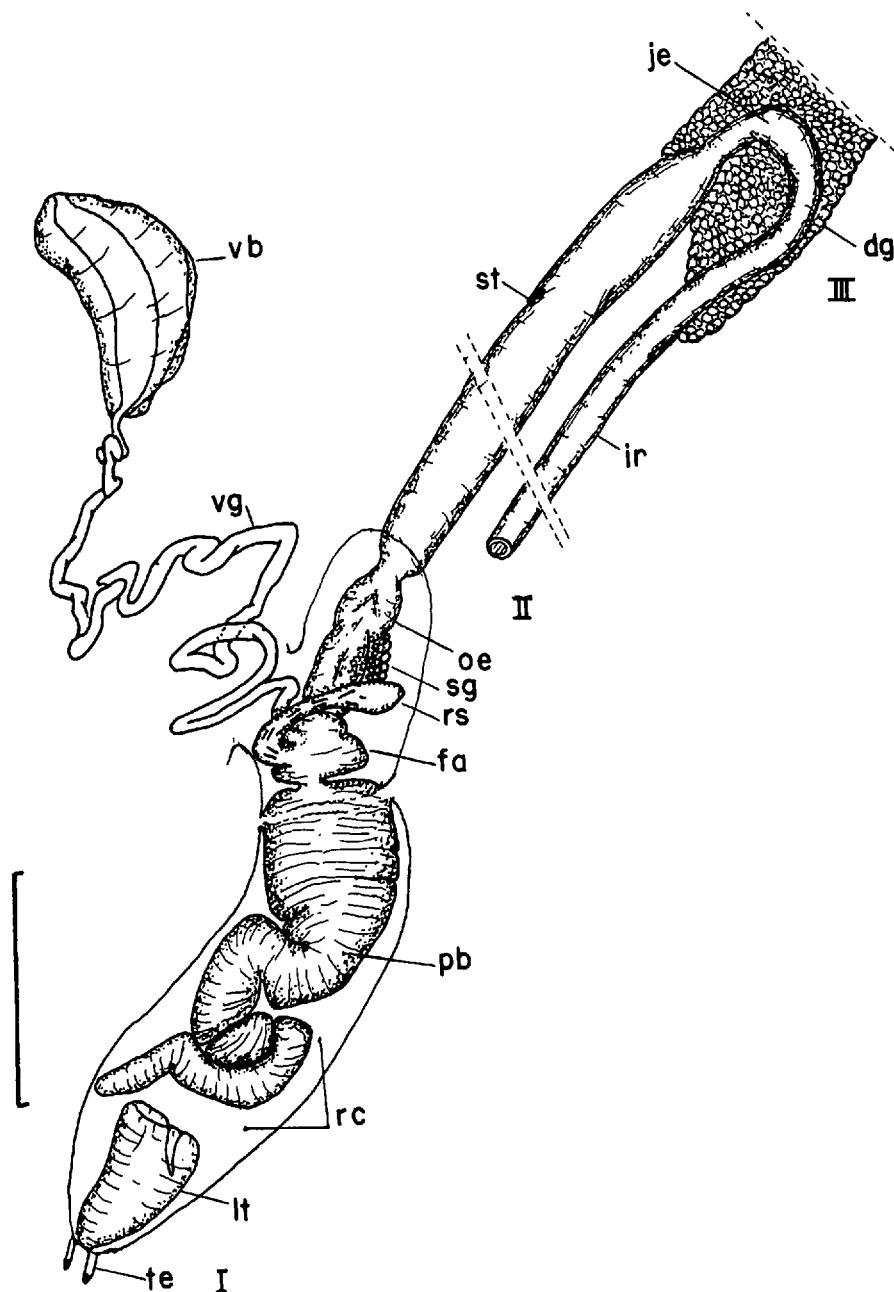


Figure 7. Scheme of uncoiled digestive system in dorsal view, roman numerals indicate the whorl number. Scale = 0.5 mm. (For abbreviations see Figure 5).

TAXONOMIC DISCUSSION

According to the classification based on foregut structure presented by Miller (1979) and Taylor and Miller (1990: 613), *T. reticulata* belongs to type "IIA." Few species of Terebridae have been dissected. The accessory proboscis struc-

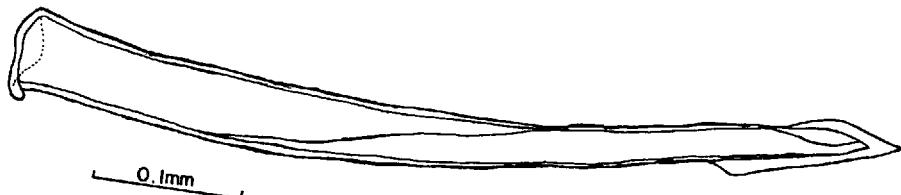


Figure 8. Radular tooth complete view.

ture, found in some species (Marcus and Marcus, 1960; Auffenberg and Lee, 1988; Taylor and Miller, 1990) is absent in *T. reticulata*. Pallial organs, particularly the female glands and the renal organ, are more simple than those described for *Hastula cinerea* (Marcus and Marcus, 1960), the taxonomic significance of these characters is unknown and may represent sexually immaturity of the examined specimens.

Terebra reticulata new species cannot be confused with any known species in Western Atlantic waters (Abbott, 1974; Rios, 1985; Matthews et al., 1975). *T. protexta* (Conrad, 1846) is somewhat similar, but *T. reticulata* is smaller, and much narrower, has fewer convex whorls, and fewer axial and spiral ribs. *T. reticulata* differs from *T. doellojuradoi* Carcelles, 1953 in having a larger size, narrow outline, less convex whorls, more developed spiral sculpture, fewer spiral ribs and protoconch with fewer whorls. *T. albocancellata* Bratcher, 1988, from Chesterfield Islands, near Australia, is also similar, but has more axial ribs, a smaller aperture and the protoconch has 3.5 whorls.

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